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the mountain slopes rising from partially cultivated rocky pastures near the river. A belt of woodland occupies the valley slopes up to an altitude of about 3600 feet, the montane forest consisting of *Betula odorata*, reaching a maximum height of 20 feet, with an undergrowth of *Betula nana*, *Juniperus nana*, *Empetrum nigrum*, and various species of *Salix* and *Vaccinium*, together with a rather abundant herbaceous vegetation. The shrubby members of this association persist in the belt of alpine shrubland, which reaches a poorly defined upper limit (4500–4800 ft.) with the disappearance of its most persistent members, *Salix reticulata* and *Betula nana*. Above is a luxuriant alpine lichen association, affording pasture for the reindeer and dotted with a variety of alpine flowers. Among the notes upon the many species examined, the scarcity of *Sphagnum* even in bogs is emphasized, and the results of a study of the variation at different altitudes of the leaves of *Betula nana*, both in size and structure, are recorded.—GEO. D. FULLER.

**Parthenogenesis in Bennettites.**—In 1894 LIGNIER published an account of the structure and affinities of *Bennettites Morieri*, and now, upon looking over his former preparations, he has come to the conclusion that the species was parthenogenetic.<sup>20</sup> The evidence is that the nucellar beak is not perforated or disorganized in any way, but is an absolutely continuous mass of primary tissue, that is, not tissue arising by proliferation and filling a passageway. The pollen chamber forms within the beak and extends more or less toward its tip, but never reaches the surface, so far as the author's preparations show. This is taken to prove that the observed embryos have developed in the absence of pollen tubes; it is recognized that they may or may not be parthenogenetic in the sense of arising from an unfertilized egg. It is further suggested that the parthenogenetic habit may have been the chief cause of the rapid disappearance of a group that was so flourishing during the Jurassic.—J. M. C.

**Permeability.**—CZAPEK<sup>21</sup> has brought together all his work on the effect of the surface tension of the surrounding fluid on the permeability of the Plasmahaut of the plant cell. Reviews<sup>22</sup> of preliminary articles have given the main points of this paper. Some evidence is offered that acids have their effect by interfering with the Plasmahaut emulsion. CZAPEK also doubts TRAUBE's conception of osmosis, though his experiments offer little evidence against it. Many more substances were found which produced exosmosis of the cell contents of phanerogams only when their aqueous solutions had a surface tension of 0.68 (or less) of that of water. The Plasmahaut of

<sup>20</sup> LIGNIER, O., *Le Bennettites Morieri* (Sap. et Mar.) Lignier se reproduisait probablement par parthénogénèse. Bull. Soc. Bot. France **58**: 224–227. 1911.

<sup>21</sup> CZAPEK, F., Ueber eine Methode zur Bestimmung der Oberflächenspannung der Plasmahaut von Pflanzenzellen. 8vo. pp. iv+86. *figs.* 3. Jena: Gustav Fischer. 1911. M. 2.60.

<sup>22</sup> BOT. GAZ. **50**: 234. 1910, and **51**: 472. 1911.